PRUTKOVSKIY, S.A., inzh.; TSIKHANOVICH, B.G., inzh.

Press forging of the active steel stators of hydraulic generators.
Vest.elektroprom. 33 no.1:70-71 Ja '62. (MIRA 14:12)
(Hydraulic presses)

TSIKHANOVICH, B.G.

Improving the design of double-jawed chucks. Stan. i instr. 28 no.10: 39-40 O '57. (MIRA 10:11)

(Chucks)

TSIKHANOVICH, B.G.

SHVARTSMAN, B.Ye., redaktor; TSIKHANOVICH, B.G., redaktor; ZAHRODINA, A.A., tekhnicheskiy redaktor

[Progressive methods of winding in the construction of electric machinery; from practices of the Kirov "Elektrosila" Plant] Peredovye priemy obmotochnykh rabot v proizvodstve elektricheskikh mashin; iz opyta zavoda "Elektrosila" imeni S.M.Kirova. Moskva, Gos. energet. izd-vo 1954. 60 p. (MLRA 8:3)

(Electric machinery--Design and construction)

TSIKHANOVICH, B.G.

Pneumatic multiseat devices using tubular diaphragms. Elektrosila no.19:48-49 '60. (MIRA 15:2)
(Pneumatic tools) (Machine tools)

USTIMENKO, I.L.; TSIKHANOVICH, B.G.

Pressing of the leading section of the rotor windings of large turbogenerators using annular hydraulic presses. Elektrosila no.22:62-66 '63. (MIRA 17:1)

TSIKHANOVICH, L. G., Engineer Cand. Tech. Sci.

Dissertation: "Investigation of Pressing Steel Cementated Bushings into Shanks of Locomotive Rods."

23 Nov. 49

Moscow Order of the Labor Red Banner Electromechanical Inst. of Railroad Transport Engineers

Imeni F. E. Dzerzhinskiy (Memiit)

SO Vecheryaya Moskva
Sum 71

TSIKHANOVICH, L.G., kandudat tekhnicheskikh nauk.

Change in the deformations of press-joined parts during the pressing. Trudy RIIZHT no.17:152-154 '53. (MLRA 9:6)
(Car axles)

TSIKHANOVICH, L.G., kandidat tekhnicheskikh nauk,

Investigation of the phenomena of vibration of axial forces at the end of pressing on and the beginning of pressing off. Trudy RIIZHT no.17:155-158 '53. (MLRA 9:6)
(Metalwork--Vibration)

TSIKERMAN, Leonid Yakovlevich; YEFREMOV, Yevgeniy Agafonovich; MINAYEV-TSIKANOVSKIY, V.A., red.; SOKOL'SKIY, I.F., red.izd-va; LELYUKHIN, A.A., tekhn.red.

[Servomechanisms used in automation of production processes in municipal services] Ispolnitel'nye mekhanizmy dlia avtomatizatsii proizvodstvennykh protsessov v kommunal'nom khoziaistve. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1959. 100 p. (MIRA 12:12)
(Automation) (Servomechanisms)

KON'KOV, V.I.; TSIKHANOVICH, B.G.

New technological finishing process for highly polished bearing discs of the large size hydrogenerators. Elektrosila no.14:104-108 '56. (MIRA 12:12)

(Bearing (Machinery)) (Electric generators)

TSIKHANOVICH, F.I., ptichnitsa

My present. Rab. i sial. 35 no.12:3 D '59 (MIRA 13:3)

1. Kolkhoz "Stalinski shlyakh" Lagoyskogo rayona.
(Lagoysk District--Poultry)

EPOV, B.A., dots.; TSIKHON, N.P., inzh.

[Blasting; a textbook] Vzryvnoe delo; uchebnoe posobie. Moskva, Mosk. in-t inzhenerov zhel-dor. transp., 1964. 196 p. (MIRA 18:12)

SHNITSER, G.B., inzh.; TSIKHON, V.A., inzh.

New equipment for making prestressed reinforced concrete products using vibrating stampers. Stroi.i dor.mashinostr. 4 no.12:19-21 D '59. (MIRA 13:3)
(Prestressed concrete) (Vibrators)

GAYEVSKAYA, N.S.; POLYAKOV, G.D.; SMIRNOV, N.N.; TSIKHON-LUKANINA, Ye.A.

Manometric method for determining the gas exchange intensity in aquatic animals. Zool. zhur. 44 no.2:169-177 '65.

(MIRA 18:5)

1. Kaliningradskiy institut rybnoy promyshlennosti i khozyaystva, Institut morfologii zhivotnykh AN SSSR, Moskva i Institut biologii vnutrennikh vod AN SSSR, Bork Nekouzskogo rayona Yaroslavskoy oblasti.

TSIKHON-LUKANINA, Ye.A.

Food and growth of freshwater gastropod mollusks. Trudy Inst. biol.vnutr.vod. no.9:191-209 '65.

(MIRA 19:1)

L 20995-66 EWT(m)

ACCESSION NR: AP5019038 UR/0286/65/000/012/0069/0069
69.057.528

AUTHOR: Vorob'yev, A. I.; Ivanovskiy, G. V.; Komarov, A. K.; Tsikhona, V. A.; Sandomirskiy, G. B.; Rubinshteyn, G. V. 10 B

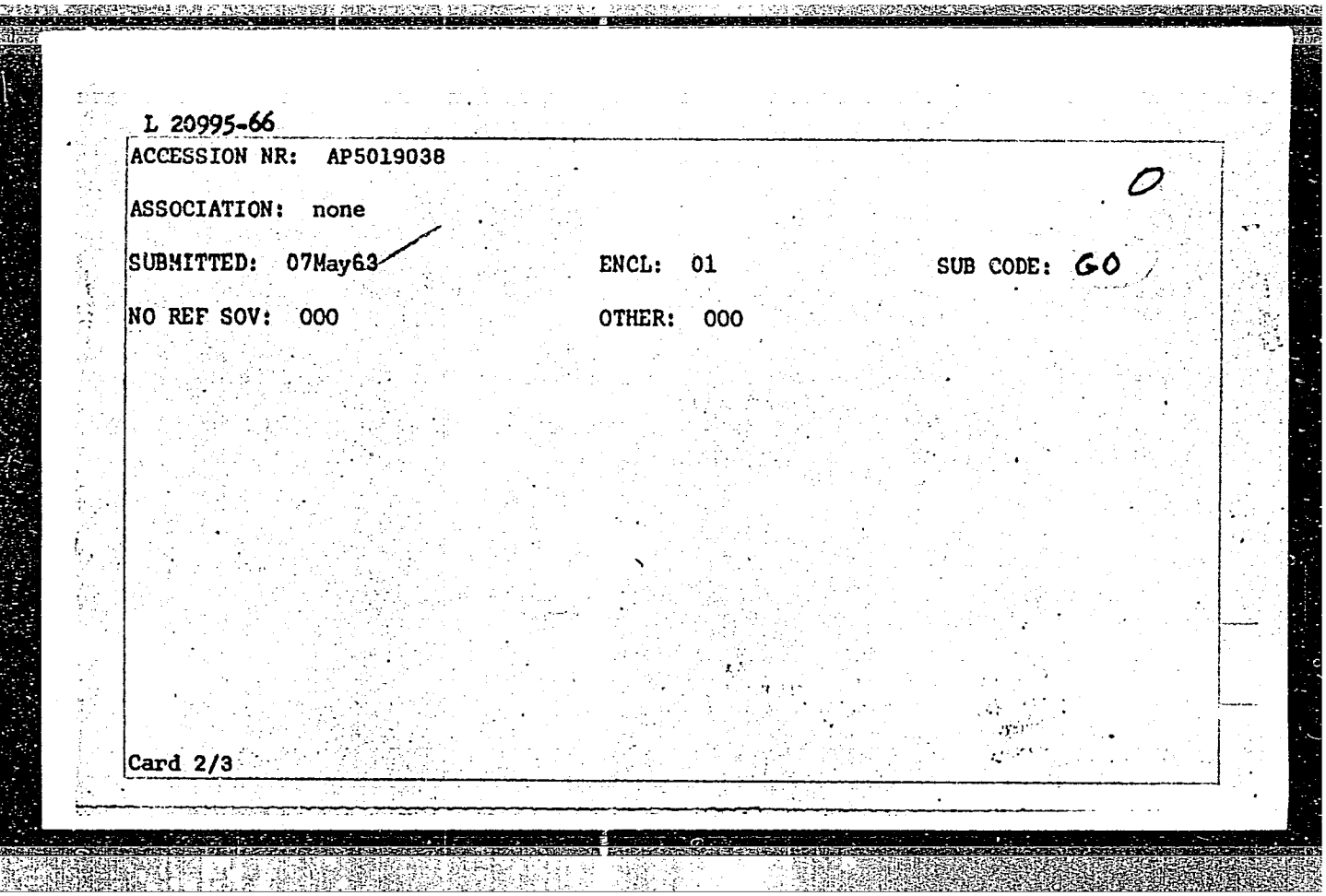
TITLE: A device for preparing concrete 16 forms. Class 37, No. 172020 15

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 69

TOPIC TAGS: concrete structure, concrete, structural concrete, construction method

ABSTRACT: This Author's Certificate introduces a device for preparing concrete forms. The device is used when the blocks which make up a structure are being joined into a monolithic unit. The apparatus includes a panel which covers the joint, and a clamping attachment. Assembly and disassembly are simplified by making the clamping attachment in the form of a support and pneumatic tubes. The tubes are located between the support and the panel and are drawn together by rods. During setup, the free ends of the rods are connected with support girders located on the other side of the joint. These support girders remain in the structure after the blocks are joined into a single monolithic unit.

Card 1/3



L 20995-66

ACCESSION NR: AP5019038

ASSOCIATION: none

SUBMITTED: 07May63 ENCL: 01 SUB CODE: GO

NO REF SOV: 000 OTHER: 000

Card 2/3

L 20995-66

ACCESSION NR: AP5019038

ENCLOSURE: 01

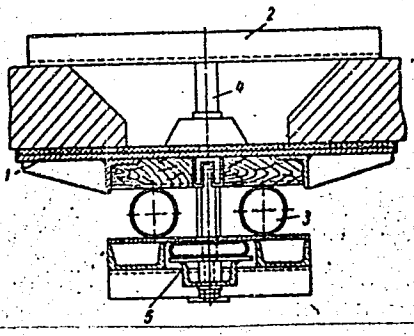


Fig. 1. 1--panel; 2--support; 3--pneumatic tube; 4--rod; 5--support girder

Card 3/3 BK

L 33018-66 LJP(c) GW

ACC NR: AP6024131 SOURCE CODE: PO/0028/65/014/004/0239/0242

AUTHOR: Cichowicz, Ludoslaw--Tsikhovich, Lyudoslav

ORG: none

TITLE: Use of tables of the natural functions tan x/2 and tan sup 2 x/2 in trigonometry and astronomy

SOURCE: Geodezja i kartografia, v. 14, no. 4, 1965, 239-242

TOPIC TAGS: trigonometry, astronomy, function

ABSTRACT: The article discusses the advisability of using in spherical trigonometry and astronomy second-order trigonometric formulas which operate as a tangent function of half of the angular element and assure better precision. [JPRS]

SUB CODE: 12, 03 / SUBM DATE: none / SOV REF: 001 / OTH REF: 001

Card 1/1

ACCESSION NR: AR4021608 S/0269/64/000/002/0018/0018

SOURCE: RZh. Astronomiya, Abs. 2.51.153

AUTHOR: Tsikhovich, L. L.

TITLE: Polish artificial earth satellite observation service

CITED SOURCE: Byul. st. optich. nablyudeniya iskusstv. sputnikov Zemli, spets. vy*p., 1962, 75-80

TOPIC TAGS: artificial satellite, artificial earth satellite, artificial satellite observation, artificial satellite observation station, visual artificial satellite observation, AT-1 telescope, photographic artificial satellite observation, radio artificial satellite observation, radar artificial satellite observation

TRANSLATION: The Polish artificial earth satellite observation service presently consists of 11 regularly operating stations. Observations are coordinated by a center which maintains contact with foreign centers. Visual observations are

Card 1/2

ACCESSION NR: AR4021608

made with AT-1 telescopes and theodolites. Accuracy of observations is standard. Work is being done to improve observation methods. For example, the accuracy of observations with the theodolite is $0'.5$ for satellite position and $0^s.010$ for time determination. Photographic artificial earth satellite observations are being made with a wide variety of cameras. Present cameras are being modified and new ones are being designed. A number of stations make radio observations. Plans call for radar artificial satellite observations. A "Bulletin of Polish Artificial Earth Satellite Observations" is being published. Bibliography of 41 titles. V. Novopashennyy.

DATE ACQ: 09Mar64 SUB CODE: AS ENCL: 00

Card 2/2

Pe-5/Pie-2

ACCESSION NR: AT5003490

AUTHOR: Tsikhovich, L. L. (Doctor, Coordinator of the stations of optical observations of artificial earth satellites)

TITLE: The Polish organization for observing artificial satellites

SOURCE: Nablyudeniya iskusstvennykh sputnikov Zemli, no. 1, 1957-1962. Moscow, 1962. Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli; spetsial'nyy vypusk, 75-80

TOPIC TAGS: artificial satellite, satellite tracking/ AT 1 telescope, 1957 α_2 satellite, 1957 α_1 satellite, 1957 β satellite, 1958 δ_1 satellite, 1958 δ_2 satellite, Hinronar camera, Ektar Kodak camera

ABSTRACT: The Polish service of observation began functioning, unofficially at first, the day after the first Soviet satellite. In 1956 the Committee for the International Geophysical Year at the Polish Academy of Sciences, thanks to [illegible] AT-1 telescopes from the Soviet Union, organized an observation network. The State Weather Institute participated in organizing the work. There are now 11 stations, [illegible] functioning in astronomical and geodetic observations at universities, 3 in other

Card 1/2

L 27231-65

ACCESSION NR: AT5003490

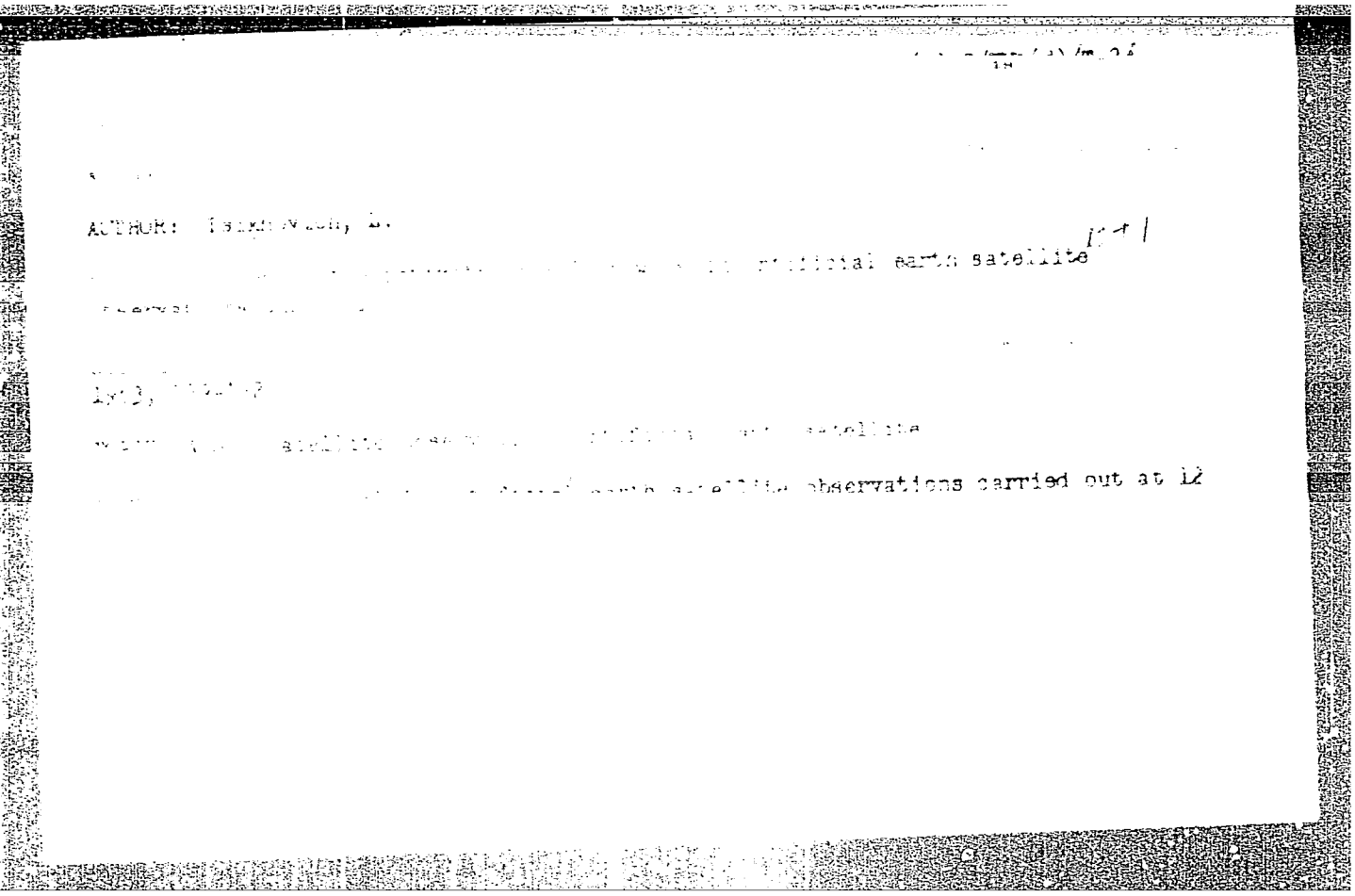
scientific institutions, and 1 elsewhere. Numbers of the stations run from 1151 to 1161. Between October 1957 and the end of 1961, 13 900 observations of satellites had been made. These were all published in the Byulleten Pol'skikh nablyudeniy iskusstvennykh sputnikov (Bulletin of Polish Observations on Artificial Satellites) and partly in Soviet bulletins. Besides the AT-1 telescopes, with modifications, geodetic theodolites have been employed for tracking. The small field is a drawback, however. Photographic tracking has been added, various cameras being used, including a Hirronar and an Astar-Kodak. Such observations were not widely made until 1961. Two radio tracking installations are now functioning; one was set up in 1958, the other in 1962. Scientific work in Poland in connection with satellites concerns developing a method of determining orbits, use of satellite data for use in geodesy, and the study of radio waves.

ASSOCIATION: Stantsiya opticheskikh nablyudeniy iskusstvennykh sputnikov Zemli v Pol'she (Station for Optical Observation of Artificial Earth Satellites in Poland)

SUBMITTED: 00 ENCL: 00 SUB CODE: SV, 00

NO REF SOV: 035 OTHER: 004

Card 2/2

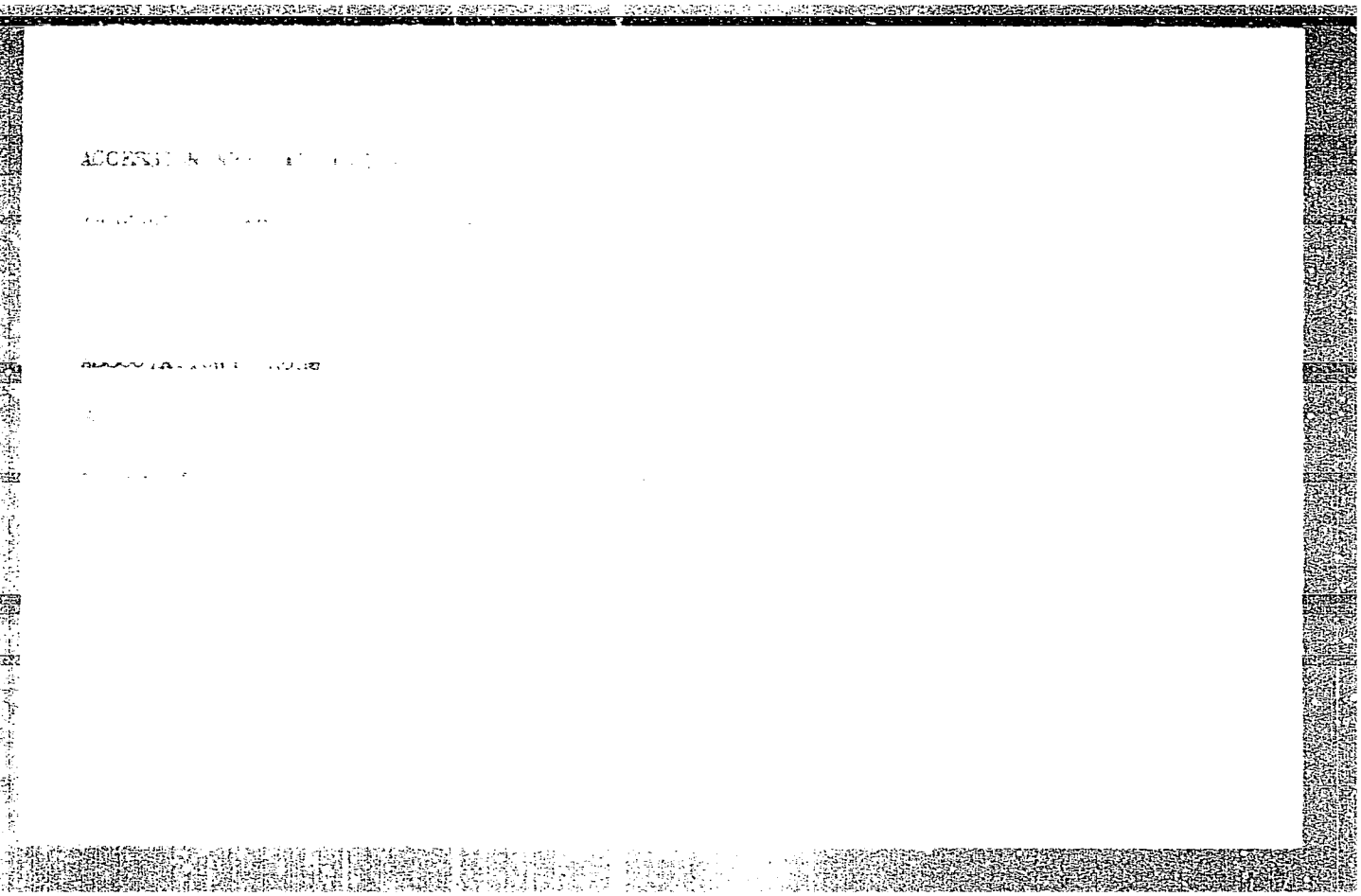


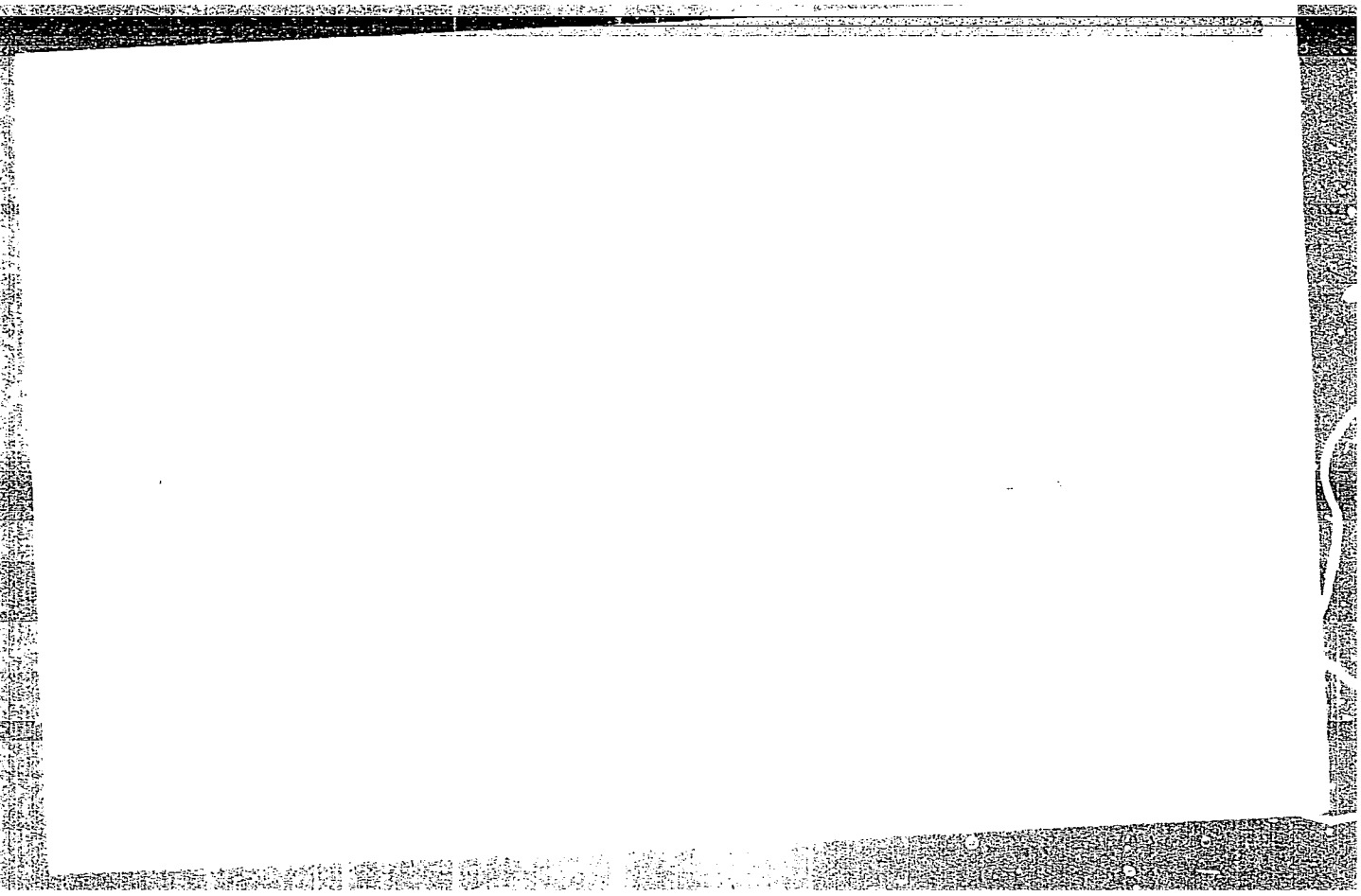
AUTHOR: [illegible]

[illegible] artificial earth satellite

[illegible] satellite

[illegible] observations carried out at L2





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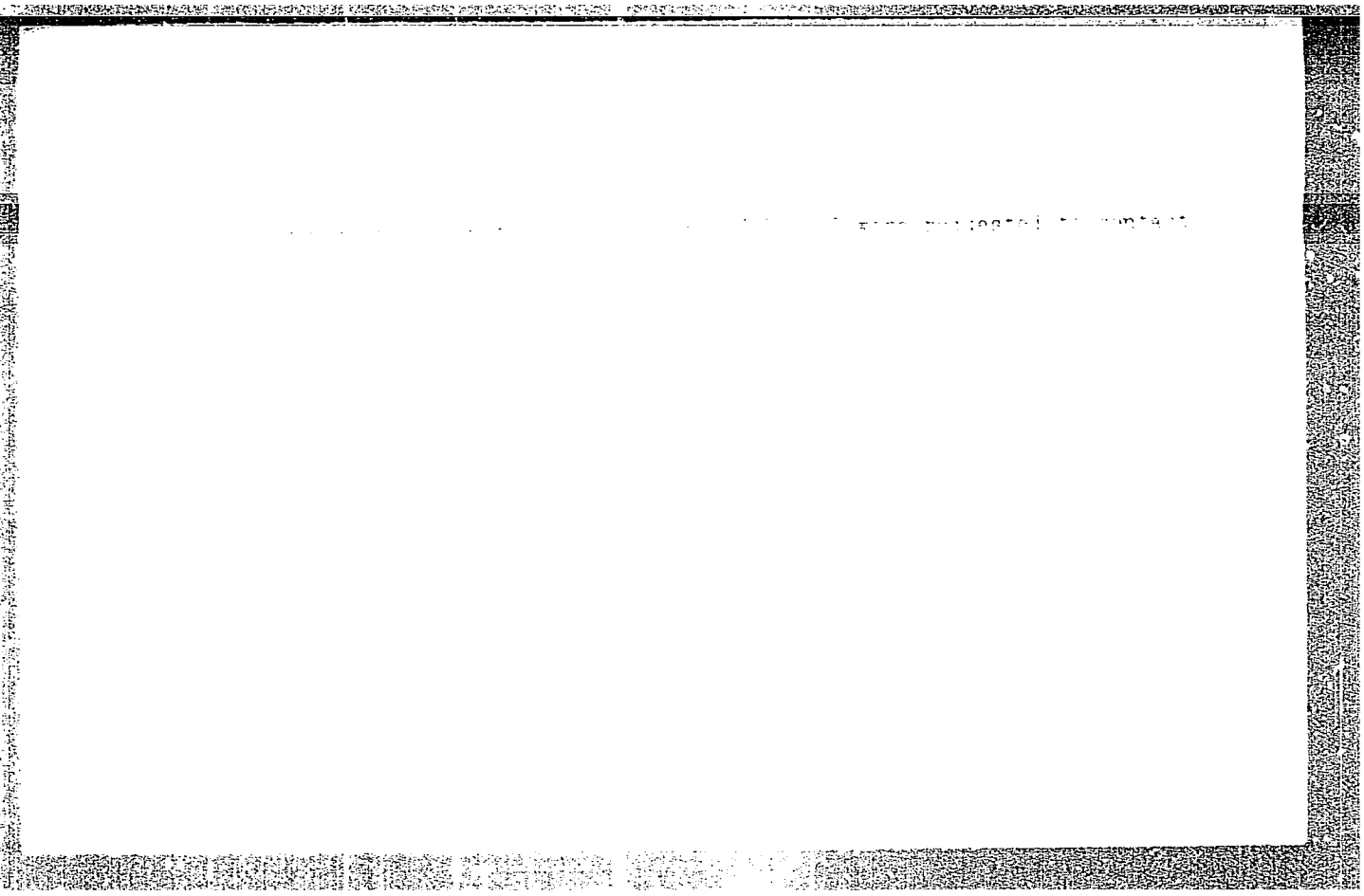


AUTHOR: Tsikin, B. G.

TITLE: Approximate theory of the TW isochronous tube

SOURCE: Radiotekhnika i elektronika, v. 10, no. 2, 1965, 312-320

TOPIC TAGS: TW tube, isochronous tube, TW tube theory

ABSTRACT: As the calculations given by G. F. Filimonov (Rad. i elektronika 1958, 3, 1, 85) cover only a few parameters of the isochronous TW tube, the present article offers a broader approximate qualitative analysis of the

law of conservation of energy in the [illegible] art. has 4 figures and 31 formulas.

ASSOCIATION: none

SUBMITTED: 19Dec63 **ENCL:** 00 **SUB CODE:** EC

NO REF SOV: 004 OTHER: 003

TSIKLAURI, A.G., agronom.

Corn in the non-chernozem zone. Nauka i zhizn' 21 no.4:23-24 Ap '54.
(MLRA 7:5)
(Corn (Maize))

TSIKLAURI, A. G.

USSR/Agriculture - Maize corn

Card 1/1

Author : Tsiklauri, A. G., agriculturist

Title : Maize corn in an unfertile region

Periodical : Nauka i Zhizn' 21/4, April 1954

Abstract : The author finds that the ground for growing maize corn should be well worked, and the plowing deep, before planting. Where crops are rotated, root crops or plants of the bean family should have preceded, and they should have been well manured. Figures of such fertilization are given. It is recommended to sow three grains in a hill in cross rows 70 cm apart or 2 grains in cross rows 60 cm apart. Planting should be done when the temperature of the soil at a depth of 9 cm is not below 10 degrees centigrade.

Institution: ....

Submitted : ....

TSIKLAURI, T. D.; Gverdtsiteli, I. M. and Mikadze, Sh. G.

Catalytic Hydrogenation of Acetylenic Glycols. Catalytic Hydrogenation of Tetra Propyl-Butenediol and Di (1-Hydroxy Cycloheptyl) Acetylene, page 956. Sbornik statey po obshchey khimii (Collection of Papers on General Chemistry), Vol II. Moscow-Leningrad, 1953, pages 1680-1686.

Tbilisi State U.

USSR

Catalytic hydrogenation of acetylenic glycols. Catal. the hydrogenation of tetrapropylbutynediol and bis(1-hydroxycycloheptyl)acetylene. I. I. Gverdtsiteli, Sh. G. Mikeladze, and T. D. Tsiklauri (I. V. Stalin State Univ., Tbilisi). *Sbornik Statei Obshchei Khim.* 2, 950–9(1953); cf. C.A. 34, 3571.—Passage of C_2H_2 at 5–10° into 81 g. powd. KOH and 200 ml. Et_2O while 56 g. cycloheptanone was being added to the mixt. over 10 hrs. gave after the usual aq. treatment 12.3% 1-ethynyl-1-hydroxycycloheptane, b$_1$ 78–9°, d_4^{20} 0.899, n_D^{20} 1.4421, along with 25.5 g. $[(CH_2CH_2CH_2)_2C(OH)C{\equiv}]_2$, b$_1$ 152–4°, m. 78–80°. Hydrogenation of this diol over Pd on starch gave the *ethylene analog*, b$_1$ 166–8°, d_4^{20} 0.8973, n_D^{20} 1.450, while hydrogenation over Pt black gave the *satd. analog*, b$_1$ 154–9°, d_4^{20} 0.8920, n_D^{20} 1.4609. Hydrogenation of $[Pr_2C(OH)C{\equiv}]_2$ over Pd gave 20% *ethylene analog*, m. 116–17.5°, and 60% *stereoisomer*, m. 81–2.5°. Hydrogenation over Pt black gave the pure satd. *analog*, m. 80–90°. The tetra-Pr glycol hydrogenates at a much slower rate than does the cycloheptyl deriv.

G. M. Kosolapoff

2

[illegible], . . .

"Projective Plenums of Plan Nets of Curves." Kand Phys-Math Sci, Tbilisi State U, Tbilisi, 1953. Dissertation (Referativnyy Zhurnal--Matematika, Moscow, Feb 54)

SO: W-30 156, 19 Aug 1954

ORESHKO, V.F.; TSIKHMISTRENKO, N.F. (Moskva)

Generation of ozone and nitric oxides by gamma irradiation in the operation of a high-power gamma installation. Gig. truda i prof. zab. 4 no.6:16-20 Je '60. (MIRA 15:4)

1. Naudhno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana.

(OZONE) (NITROGEN OXIDE) (GAMMA RAYS)

TSIKHON-LUKANINA, Ye.A.

Feeding of gobies in the Northern Caspian. Trudy Gidrobiol. ob-va 9:214-239 '59. (MIRA 12:9)

1. Kafedra zoologii bespozvonochnykh Moskovskogo gosudarstvennogo universiteta.
(Caspian Sea--Gobies) (Fishes--Food)

KRIVENKOV, D.S.; TSIKHONYA, M.L.; SEDYKH, M.V.

Productive mining methods at the Klichka mine. Biul. TSIIN tsvet. met. no.8:13-14 '58. (MIRA 11:6)
(Nerchinsk Range--Mining engineering)

TSIKHOTSKAYA, N.N. [TSikhots'ka, N.N.]

Lithology of the Sarmatian sediments in the Southern Bug and Ingul Valley. Geol. zhur. 23 no.4:105-109 '63 (MIRA 17:7)

1. Institut geologicheskikh nauk AN UkrSSR.

E-2

USSR/Virology - Human and Animal Viruses.

Abs Jour : Ref Zhur - Biol., No 8, 1958, 33602

Author : Mishkoltsi, D., Tsiki, O., Vender, V., Abragam, Al., Veyttsug, N., Vagner, K.

Inst : -

Title : Epidemic of Viral Mosquito Encephalitis of Summer's End and Autumn, Observed in Tyrga-Muresh in 1955. (Epidemiya virusnogo komarinogo entsefalita kontsa leta-oseni, nablyudavshayasya v Tyrgu Mureshe v 1955 rodu).

Orig Pub : Rumynsk. med. obozrenie, 1957, I, No 1, 58-62

Abstract : No abstract.

Card 1/1

KOYKOV, S. N.; KUNIN, V. Ya.; TSIKIN, A. N.

Analysis of a hypothesis on electrical aging of rutile ceramics. Fiz. tver. tela 4 no.4:1067-1068 Ap '62. (MIRA 15:10)

1. Leningradskiy politekhnicheskiy institut imeni M. I. Kalinina.

(Ceramics—Electric properties)

KUNIN, V.Ya.; TSIKIN, A.N.

Electrical aging of rutile single crystals. Fiz.tver.tela 4 no.12:3435-3440 D '62. (MIRA 15:12)

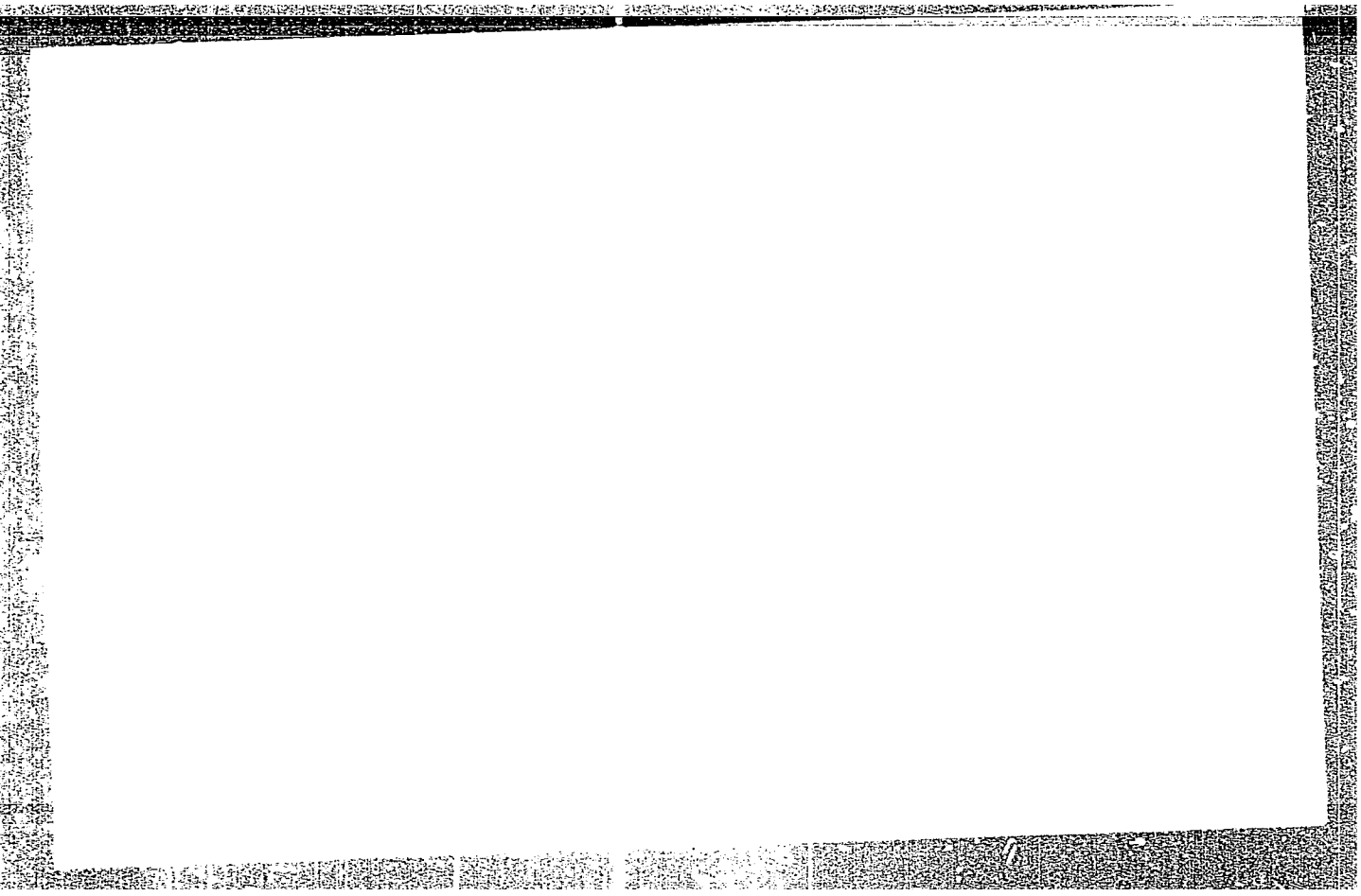
1. Leningradskiy politekhnicheskiy institut im. M.I.Kalinina.
(Rutile crystals—Electric properties)

TSIKIN, A.

SA

B64
H

718. Electric Stress which Initiates Discharge in Thin Layers of Liquid Dielectrics. A. Tsikin. *Techn. Phys., U.S.S.R.* 3. 11. *pp.* 947–955, 1936. *In English.*—The initial intensities causing discharges in thin layers of liquid dielectrics are investigated. The discharges are detected by the action of the light on a photographic plate which forms one of the layers of dielectrics placed between plane electrodes. The other layers consist of two sheets of glass, mica or celluloid spaced a definite distance apart (0·1 mm.). It is found that the discharge only becomes dangerous from the point of view of causing breakdown when the intensity is about double that required to produce the first detectable effects on the photographic plate. In transformer oil initial discharges in a 0·1 mm. gap occurs at intensities of 20–25 kV/mm. (max). A. M. T.



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KOYKOV, S.N.; TSIKIN, A.N.

Basic regularities in the aging of alundum coverings. Nauch.-tekh.inform.biul.LPI no.5:78-85 '58. (MIRA 12:5)
(Cathodes)

AUTHORS: Koykov, S. N., Tsikin, A. N. 48-22-5-19/22

TITLE: The Breakdown of Thin Alundum-Layers (Proboy tonkikh sloyev alunda)(Data From the VIII All Union Conference on Cathode Electronics, Leningrad, October 17-24, 1957)(Materialy VIII Vsesoyuznogo soveshchaniya po katodnoy elektronike, Leningrad, 17-24 oktyabrya 1957 g.)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958 Vol. 22, Nr 5, pp. 622-627 (USSR)

ABSTRACT: Thin layers of sintered aluminum (alundum) are used for insulating coatings of vacuum-tubes to avoid a short-circuit between the cathode core and the heater filament. In the operation of radio valves alundum coatings are used under rather hard conditions : at 1400 ÷ 1700°K and a relatively high electric field strength. The better part of spoilage results from a breakdown of these coatings. A study of the relevant regularities is essential for the production of more durable radio valves. Conclusions: 1. At temperatures of from 1400 - 1500°K the breakdown of alundum is due to heat, with direct current as well as with pulses.

Card 1/2 2. Below 1400°K no processes characteristic for the

breakdown due to heat have been observed; It seems that the porous dielectric had been electrically disrupted in this case. 3. The relation of the disruptive voltage to the polarity of the electrodes is due to an unreliable (leaky) contact of the outer electrode with the surface of the alundum coating. 4. The aging of alundum coatings is obviously subordinated to the rules which have been established for the aging of organic dielectrics. A. M. Shemayev, B. I. Vasserman, K. G. Kondrashova, S. A. Obolenskiy, and the first of the authors joined in the discussion. There are 8 figures and 4 references, 4 of which are Soviet.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Polytechnical Institute imeni M. I. Kalinin, Leningrad)

1. Sintered aluminum--Applications 2. Sintered aluminum coatings --Failure 3. Sintered aluminum coatings--Properties 4. Electron tubes---Materials

KOYKOV, S.N.; TSIKIN, A.N.

Basic regularities in the aging of alundum coatings. Fiz. tver. tela 1 no.3:456-461 Mr '59. (MIRA 12:5)

1. Leningradskiy politekhnicheskiy institut im. M.I. Kalinina.
(Alundum--Testing)

KOYKOV, S.N.; TSIKIN, A.N.

Solving the problem of the thermal breakdown of dielectrics under nonsymmetric boundary conditions. Fiz.tver.tela 1 no.5:789-797 My '59. (MIRA 12:4)

1. Leningradskiy politekhnicheskiy institut im. M.I. Kalinina.
(Dielectrics)

ISIKIN, A.N.

PHASE I BOOK EXPLOITATION SOV/4379

Vsesoyuznaya konferentsiya po fizike dielektrikov. 2d, 1958

Fizika dielektrikov; trudy vtoroy vsesoyuznoy konferentsii (Physics of Dielectrics; Transactions of the 2d All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1960. 532 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Fizicheskiy institut imeni P.N. Lebedeva.

Ed. of Publishing House: Ye.L. Starokadomskaya; Tech. Ed.: I.N. Dorokhina; Editorial Board: (Resp. Ed.) G.I. Skanavi, Doctor of Physics and Mathematics (Deceased), and K.V. Filippova, Candidate of Physics and Mathematics.

PURPOSE: This collection of reports is intended for scientists investigating the physics of dielectrics.

COVERAGE: The Second All-Union Conference on the Physics of Dielectrics held in Moscow at the Fizicheskiy institut imeni P.N. Lebedeva (Physics Institute imeni P.N. Lebedev) in November 1958 was attended by representatives of the principal scientific centers of the USSR and of several other countries. This collection contains most of the reports presented at the conference and summaries of the discussions which followed. The reports in this collection deal with dielectric properties, losses, and polarization, and with specific inductive capacitance of various crystals, chemical compounds, and ceramics. Photoelectrets, ferroelectric crystals, and various radiation and irradiation effects on dielectrics are investigated. The volume contains a list of other papers presented at the conference dealing with polarization, losses, and breakdowns of dielectrics, which were published in the journal Izvestiya AN SSSR, seriya fizicheskaya, Nos. 1 and 2, 1960. No personalities are mentioned. References accompany each report.

KUNIN, V.Ya.; POLONSKIY, Yu.A.; TSIKIN, A.N.

Aging of rutile ceramics. Izv.vys.ucheb.zav.;fiz. no.2:85-89 '60.
(MIRA 13:8)

1. Leningradskiy politekhicheskiy institut im. M.I.Kalinina.
(Titanium oxide) (Semiconductors)

15.2640

S/196/61/000/010/007/037
E194/E155

AUTHORS: Koykov, S.N., Kunin, V.Ya., and Tsikin, A.N.

TITLE: Empirical relationships characterising changes in the electrical conductivity of rutile ceramics during ageing and regeneration

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.10, 1961, 19, abstract 10B 85. (Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t, no.9, 1960, 114-118)

TEXT: Rutile ceramic is known to age in an electrical field at temperatures above 150 °C. Ageing causes increase in the specific conductivity of the ceramics with time. After removal of the electric field or change in the polarity of the applied voltage, regeneration of the rutile ceramic occurs: the resistivity increases first rapidly and later slowly. Formulae are proposed to describe change of conductivity with time, expressing the conductivity as the sum or product of exponential functions and a constant term. 4 literature references.
[Abstractor's note: Complete translation.]
Card 1/1

S/181/60/002/010/004/051
B019/B070

24/700 1482, 1138, 1393 only

AUTHORS: Kunin, V. Ya. and Tsikin, A. N.

TITLE: Change in the Dielectrical Properties of Rutile Ceramics on Passage of Current and During Initial Heating

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 10, pp. 2359-2365

TEXT: Some new results of studies of titanium containing ceramics are given, which allow a judgement of a number of assumptions made in the earlier publications. Tubes of 32 mm length, 6 mm diameter, and 1 mm wall thickness were used; they were made of a ceramic material consisting of up to 87% titanium dioxide (rutile), ZrO_2, Al_2O_3, SiO_2, and BaO with $\varepsilon = 80$. The results of the following experiments and their evaluations are discussed: time dependence of the conduction current, dependence of the lifetime of the samples on the intensity of the electric field and the temperature, change in the activation energy of the carriers on being subjected to an electric field and high temperature for a long time, conduction in direct current with periodically changing polarity and in

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84583

Change in the Dielectrical Properties of Rutile Ceramics on Passage of Current and During Initial Heating

S/181/60/002/010/004/051
B019/B070

alternating current, and regeneration of the properties of aged titanium containing ceramics. The results are summarized as follows: 1) An aging of the ceramics results on passage of all types of current and on heating. 2) The aging of all titanium containing ceramics is brought about by the production of anionic vacancies in titanium dioxide. 3) Alternating current (50 cps) and periodic changes in polarity of direct current for periods shorter than the life of the specimen produced no aging under the same voltage and temperature conditions which resulted in aging with direct current. Further, it could be shown that the regeneration of the properties of rutile ceramics at high temperatures takes place not only in an oxidizing atmosphere but also in pure oxygen and in reducing media (hydrogen). V. G. Zakharov participated in the work. There are 6 figures and 7 references: 3 Soviet, 1 Czech, 2 German, and 1 US.

ASSOCIATION: Politekhnicheskiy institut im. M. I. Kalinina, Leningrad (Polytechnical Institute imeni M. I. Kalinin, Leningrad)

SUBMITTED: March 17, 1960

Card 2/2

87902

S/181/60/002/012/001/018
B006/B063

9.2400 (1001, 1159, 1331)

AUTHORS: Koykov, S. N. and Tsikin, A. N.

TITLE: Solution of the Problem of Thermal Breakdown of Heterogeneous Dielectrics

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 12, pp. 2989-2997

TEXT: When calculating the puncture voltage of inhomogeneous dielectrics according to the theory of thermal breakdown, difficulties are encountered in the case of a constant current if the field strength in the dielectric is proportional to the resistivity of the various parts. The present article, a theoretical study of thermal breakdown on a dielectric plate, in which resistivity ϱ is a function of the temperature, T, and the Z coordinate, is intended as a contribution to the solution of this problem. This function is given by $\varrho = \varrho_{o\beta} f(\beta Z/h)\exp(-\alpha T)$, where $\varrho_{o\beta}$ is a constant coefficient. The boundary conditions are symmetric. The problem consists in solving the differential equation for heat conduction, which takes the

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87902

Solution of the Problem of Thermal Breakdown of Heterogeneous Dielectrics

S/181/60/002/012/001/018
B006/B063

form: $d^2x/dU^2+De^{-x}f(\beta U) = 0$, $-dx/dU|_0 = 0$; $-dx/dU|_1 = Cx_1 = \xi$; $(U=Z/h)$. The equation is solved for a) $f(\beta_a U) = 1+\beta_a U$ and b) $f(\beta_b U) = e^{\beta_b U}$. Explicit expressions for the breakdown voltage are derived for a) and b). Practical examples of the application of the resulting formulas are computed, and the results are compared with those obtained from Fok's theory. Deviations from the results of Fok's theory can partly be explained by the fact that ϱ_0 was assumed to be independent of E, which may lead to great errors at high values of E. The authors thank Ye. V. Kuvshinskiy and B. P. Berkovskiy for reading the manuscript and critical remarks, and also Yu. N. Malyshev for discussions. There are 4 figures and 2 Soviet references.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: April 4, 1960

Card 2/2

S/108/60/015/011/011/012
B019/B063

13,2960 (2202, 1001, 1159)

AUTHORS: Koykov, S. N. and Tsikin, A. N.

TITLE: A Method of Quick Determination of the Service Life of Radio Parts by Steady Increase of Voltage

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 11, pp. 73-76

TEXT: The present paper deals with Kimmel's method of testing radio parts (Ref. 3). Kimmel' suggested a steady increase of the test voltage at a constant rate c for the testing of paper capacitors. On the basis of these results, the authors calculate the service life of these capacitors at a constant voltage U_2 from formula (1):

$$\tau_2 = \int_0^t (ct/U_2)^K dt = (c/U_2)^K t^{K+1}/(K+1)$$

Kimmel' derived this formula from empirical relations. The authors of the present paper disagree with the determination of the service life of paper capacitors from formula (1). They demonstrate that (1) may be derived

Card 1/2

85488

A Method of Quick Determination of the Service Life of Radio Parts by Steady Increase of Voltage

S/108/60/015/011/011/012
B019/B063

from the theory of thermal aging whereas the service life of a paper capacitor depends on aging in an electric field. Proceeding from this results, the authors discuss the proper determination of the service life of radio parts with a steady increase of the test voltage. It is shown that the service life of a paper capacitor can be calculated from (1) only if (10): $\Phi[P_{cr}(\xi)] = \Phi[P_{cr}(\xi_m)] = \text{const}$ is valid. Here, P_{cr} is a critical value of P, and ξ_m is a symbolical denotation of the time-variable parameters characterizing the test conditions (increase of the test voltage). It is finally noted that the adequate conditions for the testing of radio parts with an increase of the test voltage can be found only by a thorough examination of the aging rule as a function of voltage and time. There are 5 references: 3 Soviet, 1 German.

SUBMITTED: May 16, 1960

Card 2/2

89292

S/181/61/003/001/031/042
B102/B204

9.2110 (1001, 1145, 1153, 1137)

AUTHORS: Kunin, V. Ya. and Tsikin, A. N.

TITLE: The characteristic peculiarities of the change in electrical conductivity of rutile ceramics during the process of electrical ageing and regeneration

PERIODICAL: Fizika tverdogo tela, v. 3, no. 1, 1961, 217-223

TEXT: Rutile ceramics, which are characterized by a high ε, are frequently used as dielectrics in capacitors. However, under the action of increased temperature and electric field, they show indications of ageing (deterioration of dielectric properties). Thus, it is possible to determine a lifetime (according to which a breakdown occurs at given U,I and t) for products in which rutile ceramics are used. Already in two previous papers the authors dealt with this subject as well as with investigations of the kinetics and mechanism of ageing processes. Among other things, it was found that rutile ceramics showed no indications of ageing in alternating fields or in constant fields undergoing periodic reversal of polarity. Thus, in the case of reversal of the field

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direction, regeneration (decrease of conductivity) is bound to occur. In addition, regeneration occurs only at elevated temperatures with or without a field of opposite direction, and with or without oxygen in the surrounding medium. For the purpose of studying the regeneration process, the change in electrical conductivity in the case of ageing and regeneration was systematically studied. The experiments described in the present paper were carried out with the same specimens as in earlier publications (Izv.VUZov, Fizika, no. 2, 1960 and Fiz.tverd.tela, II, no. 10, 1960). Fig. 1 shows typical forms of the time dependence of conductivity in regeneration at elevated temperatures without electric field. 3 specimens were subjected to the effect of 800 v at 180°C for 25 minutes. The conductivity during this time rose to $3 \cdot 10^{-8}$ a/v (curve 1); after the field had been switched off, it dropped jumplike, and again attained the initial value after some time (under the effect of 180°C). In the case of repeated ageing of the three specimens (800v) during 20, 155, and 2100 min (curves 3,4,5) the value of $3 \cdot 10^{-8}$ a/v was attained after 7, 12, and 18 min respectively. The change in time of the current in rutile ceramics was investigated during reversal of polarity. The

specimen was subjected to the first process of ageing at 800v during 100 min at 150°C, where the current rose to 8 μa (curve 1 in Fig.2), with following reversal of polarity. The current dropped sharply during some seconds and attained a low value in the opposite direction (curve 2 in Fig. 2). After one minute polarity was again reversed - the current attained 8μa within 10 minutes (instead of 100 minutes as in the case of the first ageing). During the following cycles, the time of regeneration was prolonged and, thus, also the time of the following ageing increased. Under these experimental conditions, regeneration was completed within 25 min (curve 6), which means that the initial state had been practically restored (curve 7). Curve 8 shows that during a reversal of polarity of longer duration, ageing also occurs. The time dependence of conductivity after the reduction of field strength during ageing is shown in Fig.3.

Three specimens were investigated (800v/mm, 150°C); within 22 hours they attained $7 \cdot 10^{-8}$ a/v (curve 1); next, the field on one specimen was entirely switched off, while on the other two it was reduced to 270 and 360 v/mm, respectively (curves 2,3,4). All experiments showed that the jumplike drop of conductivity is no regeneration, unlike the subsequent

slow process. Among the possible hypotheses concerning the mechanism of ageing of rutile ceramics, ionization- and electromechanical ageing are eliminated first of all. TiO_2 has a n-type conductivity which is due to the presence of lattice defects (anionic vacancies). Most of the other hypotheses concerning ageing assume that these processes are due to the increase of defect concentration in TiO_2. Such an increase may, however, be explained in different ways: a) forming of free anionic vacancies during heating; here, electrons are trapped, and F-centers are formed. A change in the color of rutile ceramics during ageing may, indeed, be observed. As, however, no ionic conductivity could be found, a) appears to be improbable. b) Penetration of H^+ ions into the ceramics as a result of dissociation of adsorbed water molecules. This assumption is in contradiction to experimental results carried out in hydrogen and oxygen. c) In the electric field, new defects are formed at elevated temperatures, which supply local levels in the forbidden band; in this case, regeneration may be explained only if TiO_2 paired defects exist.

It may be assumed that, under the effect of field and thermal motion,

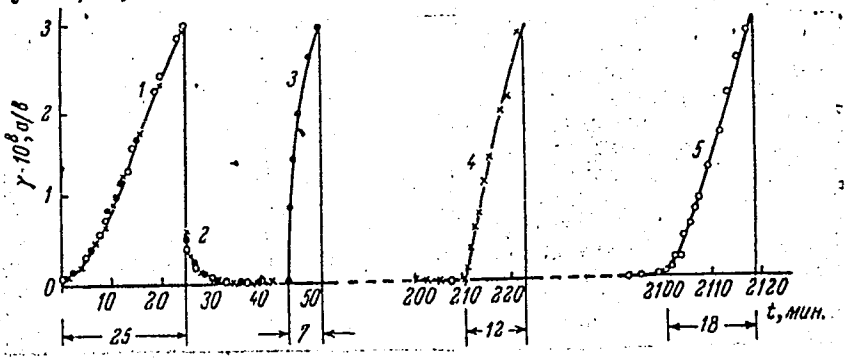
The characteristic peculiarities...

oxygen ions leave the TiO_2 lattice sites and remain between the sites near the anionic vacancies. This may well explain the observed phenomena.
There are 3 figures and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina
(Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: July 11, 1960

Fig. 1



Card 5/7

The characteristic peculiarities...

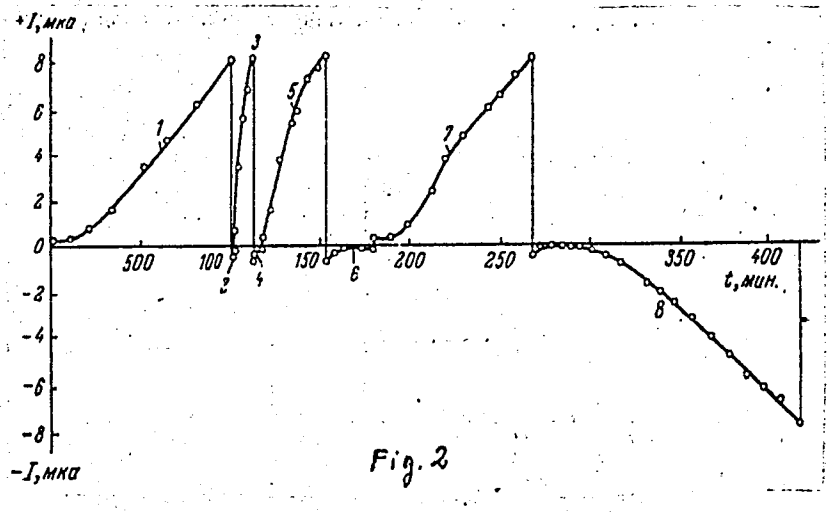


Fig. 2

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The characteristic peculiarities...

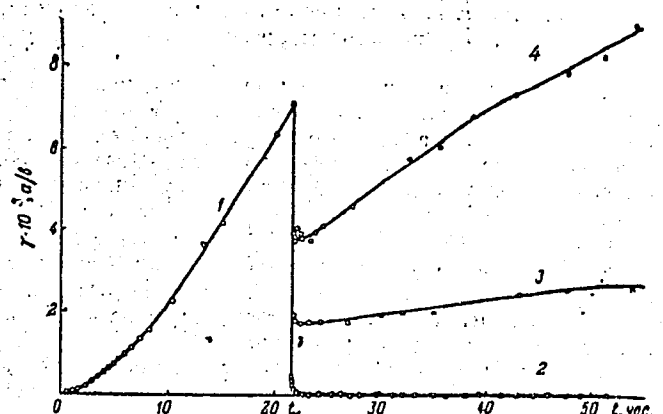

Fig. 3

Card 7/7

KOYKOV, S.N.; KUNIN, V. Ya.; TSIKIN, A.N.

Calculating changes in the concentration of defects in rutile ceramics during aging and regeneration. Fiz. tver. tela 3 no.2:651-657 F '61. (MIRA 14:6)

1. Leningradskiy politekhnicheskiy institut im. M. L. Kalinina
(Rutile)

36876

15.8317

S/181/62/004/004/020/042
B104/B108

AUTHORS: Kunin, V. Ya., Fomenko, L. N., and Tsikin, A. N.

TITLE: Changes in electrical conductivity and in the distribution of the electrical field potential in rutile ceramics during aging

PERIODICAL: Fizika tverdogo tela, v. 4, no. 4, 1962, 972 - 976

TEXT: The electrical conductivity and the potential distribution across the sample were determined on samples with 87% TiO_2 annealed at 1380 -1400°C in air, at different aging and regeneration stages. Palladium electrodes were applied to the 30-15 mm surfaces of 6.3 mm thick samples. Ni wire probes were introduced into 1.5 - 2 mm wide cylindrical apertures on the flat sides of these samples. The measurements were made at constant temperatures of 200-250°C and at constant field strength of 140-430 v/mm. The electrical conductivity as a function of time exhibits four sections: (1) slight rise or drop; (2) a sharp rise; (3) slight rise; (4) rapid rise

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until the sample is destroyed. If, during the sharp rise of conductivity, the voltage applied to the sample is reduced, the relative potential distribution which is linear across the sample remains unchanged. The unusual relationship between electrical conductivity and potential distribution in the aging of rutile ceramics can be explained by changes in defect concentration. Other as yet unclarified processes take place in addition to concentration changes in the abovementioned third aging period. There are 4 figures.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: November 30, 1961

ACCESSION NR: AP5[illegible]4328

AUTHOR: Popova, M. V.; Semushkin, G. R.; Tatkin, A. N.

TITLE: [illegible]

SOURCE: AN SSSR Izvestiya. Seriya fizicheskaya, v.29, no.1, 1965, 82-85

TOPIC TAGS: alkali halide, single crystal, temperature, electric conductivity, aging process

ABSTRACT: The aging of KCl and KBr crystals in fields from 50 to 1000 V/cm was investigated at temperatures from 35° [illegible] (for KBr). Metal foil electrodes were [illegible] satisfactory provided [illegible] the experiment. The current [illegible]

Card 1/

L 32815-65

ACCESSION NR: AP5004528

the case of the KBr crystals, and tenebrescence was either absent or very weak. When tenebrescence was observed it [illegible] simultaneously throughout the crystal with no trace of tenebrescence [illegible] crystals only the first three regions of the current curve were ordinarily observed, and these were less sharply distinguished [illegible] was regularly [illegible] In some crystals the [illegible]

[illegible]

[illegible] Discharge [illegible] with time [illegible]

[illegible] theory [illegible] the processes [illegible] other requires further study. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 00Jan63 ENCL: [illegible] SUB CODE: SS

NR REF SOV: 001 OTHER: 001

Card 2/2

L 11128-66 EWT(l)/EWT(m)/EWP(e)/EWP(b) LJP(c) WH

ACC NR: AP6000881 SOURCE CODE: UR/0181/65/007/012/3666/3668

AUTHORS: Kunin, V. Ya.; Tsikin, A. N.; Shakirov, A.

ORG: Leningrad Polytechnic Institute im. M. I. Kalinin (Leningradskiy politekhnicheskiy institut)

TITLE: Change in the electric conductivity of ceramics with perovskite lattice when exposed to an electric field and a high temperature

SOURCE: Fizika tverdogo tela, v. 7, no. 12, 1965, 3666-3668

TOPIC TAGS: electric conductivity, semiconducting ceramic material, temperature dependence, electric field, chemical valence

ABSTRACT: The authors present the results of an investigation of the variation of current density with exposure time for the ceramics $CaTiO_3$, $CaZrO_3$, $CaSnO_3$, $SrTiO_3$, $BaTiO_3$, and $SrZrO_3$ with perovskite structure, and also the ceramics $SrTa_2O_6$ and $Sr_2Nb_2O_7$, which have a

Card 1/2

L 14128-66
ACC NR: AP6000881

3

more complicated structure (still unknown). It was found that titanium ceramics age more intensely than all others, so that to reduce the time the ceramics which contain no titanium were investigated at higher values of the field and of the temperature. The results were similar to those previously obtained by the authors (FTT v. 2, 2359, 196) for rutile ceramics, but with a noticeable quantitative difference in the values of the current density before aging and during the various stages of aging. The differences are too large to be attributed to the effect of the various additives employed, and is most likely to be due to the fact that the titanium and zirconium ions used in the ceramics have variable valence. Orig. art. has: 2 figures

SUB CODE: 20/ SUBM DATE: 03Jun65/ ORIG REF: 001/

TS

Card 2/2

L 23698-66 EWT(l)/EWT(m)/EWP(t) IJP(c) JD/JG

ACC NR: AR6005220 SOURCE CODE: UR/0058/65/000/009/E074/E074

AUTHOR: Kunin, V. Ya.; Semushkin, G. B.; Tsikin, A. N.

TITLE: Study of the processes occurring in KBr crystals under the influence of an electric field

SOURCE: Ref. zh. Fizika, Abs. 9E624

REF SOURCE: Sb. Proboy dielektrikov i poluprovodnikov, M.-L., Energiya, 1964, 333-338

TOPIC TAGS: potassium bromide, electric field, color center, alkali halide, electric conductivity

TRANSLATION: Under the influence of an electric field at high temperatures, coloring (C) of alkali-halide crystals by F centers takes place. In this case one observes an increase in the electric conductivity of the crystal. Results are presented of a study of the kinetics of the C, and also of the changes of the electric properties of the crystals during C and discoloring. The experiments have been made in the temperature range 400--620C at electric field intensities 3--30 v/mm. At temperatures < 450C, there is either no C at all, or else it develops so slowly that it is impossible to relate an increase in the electric conductivity with it. The obtained data cannot be explained on the basis of the existing hypothesis on the mechanism of electrolytic C of alkali-halide crystals. A. Petrashko.

SUB CODE: 20

Card 1/1

L 44596-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AR6010499 SOURCE CODE: UR/0196/65/000/010/B005/B006

30
29
B

AUTHOR: Kunin, V. Ya.; Semushkin, G. B.; Tsikin, A. N.

TITLE: A study of the processes occurring in KBr crystals under the effect of an electric field

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 10B36

REF SOURCE: Sb. Proboy dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 333-338

TOPIC TAGS: potassium bromide, color center, single crystal structure, crystal electric conductivity

ABSTRACT: Under the effect of an electric field at high temperatures and in a vacuum-tight contact between the cathode and the crystal, the coloring (C) of alkali-haloid crystals by F-centers occurs. In this case an increase in the electrical conductivity (EC) of the crystal is observed. The results of a study of the kinetics of the C process are given, and also the changes in the electrical properties of the crystals during C and decolorization. The experiments were conducted in the temperature region of 400—620C with electric field intensity of 3—30 w/mm. At temperatures of < 450C, C either does not occur at all or develops so weakly that it is impossible to associate a significant increase in EC with it. The time dependences

Card 1/2 UDC: 621.315.61.011.2

L 44596-66

ACC NR: AR6010499

of EC of KBr crystals and the intensity of C have four clearly defined sections: 1) in the initial period after the application of the electric field, the EC retains a constant value and C is lacking; 2) and increase in EC occurs, accompanied by intensive C from the cathode (at temperatures of < 450—500C); 3) after passage across the maximum, steady-state values of EC and intensities of C are established; 4) an increase in the EC of the crystal and the intensity of C again occurs, until thermal breakdown sets in. The transition to the third stage is accompanied by a discharge of a cloud of excess C from the region at the cathode and the establishment of a linear potential distribution along the thickness of the crystal. The changes occurring in C of the crystals at the second stage are reversible, both in heating in the lack of an electric field and in a field of inverse polarity. Changes in the potential difference between the electrodes, and also changes in the shape and position of the cloud of C occurring in the process of heating of colored crystals after the voltage is switched off indicates that C of the crystals is accompanied by the establishment of a complex distribution of volumetric charges in the crystal. The presence of analogous stages of the variation of EC in time, in the absence of C, indicates that the growth of EC of crystals of KBr, when kept in an electric field at an increased temperature, is not merely caused by electrolytic coloring. The experimental data obtained cannot be explained on the basis of the existing hypothesis concerning the mechanism of electrolytic coloring of alkali-haloid crystals. [Translation of abstract] 4 illustrations and bibliography of 13 titles. [Leningrad Polytechnical Institute im. M. I. Kalinin (Leningradskiy politekhnich. in-t)] A. Petrashko

SUB CODE: 20

Card 2/2

L 24514-66 EWT(d)/EWT(m)/EWP(w)/ETC(m)-6 SOURCE CODE: UR/0413/66/000/005/0123/0123
ACC NR: AP6009558 IJP(c) EM/WW/JD/JG

INVENTER: Tsin, M. R.; Polishchuk, V. P.

ORG: none

TITLE: Device for pumping nonconductive melts. Class 59, No. 179623

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 123

TOPIC TAGS: melt, nonconductive melt, pumping unit

ABSTRACT: An Author Certificate has been issued describing a unit for pumping nonconductive melts. To increase the pressure, the ring-shaped chamber is equipped with an additional reservoir whose capacity is somewhat greater than that of the chamber itself. [LD]

SUB CODE: 13/ SUBM DATE: 21Feb62/

Card 1/1 BLG UDC: 621.689

L 05714-67 EWT(1) UJP(c) GG

ACC NR: AR6010504 SOURCE CODE: UR/0196/65/000/010/B007/B007

AUTHOR: Koykov, S. N.; Tsikin, A. N.

TITLE: Generalization of the theory of thermal breakdown of solid dielectrics with consideration of the nonsymmetric conditions of cooling, heat release in the electrodes, and the variations in the specific active conductivity through the thickness of the specimen

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 10B41

REF SOURCE: Sb. Proboy dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 277-284

TOPIC TAGS: dielectric breakdown, thermal property, dielectric material, dielectric property

ABSTRACT: A theory is developed for the thermal breakdown of solid dielectrics with ac voltage applicable to real conditions of the operation of commercial dielectrics: a) heat release in electrodes, b) variations in the specific electrical resistance in the thickness of the specimen (the heterogeneity of the dielectric), and c) dissimilar (nonsymmetrical) conditions of cooling with respect to the electrodes. [Translation of abstract] 2 illustrations and bibliography of 8 titles. A. Petrashko

SUB CODE: 11, 09

UDC: 621.315.61.015.51.001.1

Card 1/1

L 05656-67 EWP(j)/EWT(m)/T IJP(c) RM/JYT(CZ)

ACC NR: AR6010513 SOURCE CODE: UR/0196/65/000/010/B012/B012

AUTHOR: Koykov, S. N.; Tsikin, A. N.

TITLE: Variations of penetration voltage, thickness, and weight of polymer films in ionization aging

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 10B62

REF SOURCE: Sb. Proboy dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 307-310

TOPIC TAGS: nonmetal aging, surface film, polyethylene, polystyrene, polyethylene terephthalate, polytetrafluoroethylene

ABSTRACT: The results of a study of the physicochemical changes occurring in ionization aging in films of industrial PE [polyethylene], polystyrene, polyethylene terephthalate, and polytetrafluoroethylene are expounded. For aging the films, test devices of two types were used. 1. The polymer film was placed in the air gap between two glass plates, to the outer surface of which metal electrodes were fastened. An alternating voltage was fed to the electrodes, adequate for the development of intensive ionization processes in the air gap. The entire structure was placed in a glass beaker, where the discharge products (ozone and nitric oxides) were gradually accumulated. Besides the film being tested, on which the discharges

Card 1/3 UDC: 621.315.616.96.015.532

acted directly, a control specimen was placed under the beaker, subjected only to the "indirect" effect of the discharges (i.e., the chemical effect of ozone and nitric oxide). 2. The polymer film was located directly between metal electrodes. The effect of discharge product alone (method 1) is inadequate for intensive change of the short-duration penetration voltage U_t and does not lead to a decrease in the thickness of the film (erosion). In the direct effect of the discharges, the basic cause of the change in U_t is the decrease in the thickness of the film due to erosion. A power dependence exists

$$dh \mid dt = -C \cdot E^m \quad (1)$$

($m \approx 3$) between the rate of decrease of the thickness and the average field intensity in the solid dielectric, $E = U/h_1$, calculated without consideration of the voltage drop in the ionized air gap. The dependences obtained experimentally from method 2 are

$$\lg \tau = f(\lg U), \quad \frac{U_t}{U_0} = f\left(\frac{t}{\tau}\right) \quad (2)$$

where U_0 is the short-duration penetrating voltage before aging, τ is lifetime, and also the distributions of the specimens of films by the magnitude of U_t and τ agree with the calculation curves, which were constructed with the use of the distribution according to U_0 on the basis of the ratios derived from Eq. (1). This correspondence serves as indirect evidence that the

L 05856-67
ACC NR: AR6010613

kinetics of aging of polymer films in indirect application of metal electrodes is the same as in the gap between glass plates. [Translation of abstract] 5 illustrations and bibliography of 10 titles. [Leningrad Polytechnical Institute im. M. I. Kalinin (Leningradskiy politekhnich. in-t)] A. Petrashko

SUB CODE: 11, 20 07

kh

Card 3/3

KOYKOV, S.N.; TSIKIN, A.N.

Determination of the life of insulation subjected to a continuously rising voltage. Radiotekhnika 20 no.3:54-59 Mr '65.
(MIRA 18:6)

AUTHOR:

TITLE: Method for determining the

voltage

SOURCE: Radiotekhnika, v. 20, no. 3, 1965, 54-59

insulation testing

Card 1/2

ACCESSION NR: AP5[illegible]

[illegible] formula, (2) Possibility of [illegible] the calculation due to the steam [illegible] and [illegible]

[illegible] obtained by the two [illegible] has 3 figures [illegible]

ASSOCIATION: none

SUBMITTED: 04Jul63 ENCL: 00 SUB CODE: EE

NO REF SOV: 004 OTHER: 002

Card 2/2

POPOVA, M.N.; SEMISHKIN, G.B.; TSIKIN, A.N.

Change in the electric properties of alkali halide crystals due to prolonged exposure to a constant electric field. Izv. AN SSSR Ser. fiz. 29 no.1:82-85 Ja '65.

(MIRA 18:2)

BARABANOV, N.N., inzh.; KOYKOV, S.N., kand.fiziko-matematicheskikh nauk; FOMIN, V.A., inzh.; TSIKIN, A.N., kand.tekhn.nauk

Ionization aging of polymer films in a wide range of temperatures, voltages, and frequencies. Elektroteknika 34 no.12:15-19 D '63. (MIRA 17:1)

KUNIN, V.Ya.; SEDUNOV, Yu.N.; TSIKIN, A.N.

Change of the type of conductivity of rutile ceramics and rutile single crystals in the process of electric aging. Fiz. tver. tela 5 no.10:2771-2774 O '63. (MIRA 16:11)

1. Leningradskiy politekhnicheskiy institut im. Kalinina.

KOYKOV, S.N.; KUNIN, V.Ya.; TSIKIN, A.N.

Variations in the concentration of dissociated defects in the aging process of rutile ceramics. Izv.vys.ucheb.zav.;fiz.no.2:66-71 '63.
(MIRA 16:5)

1. Leningradskiy politekhnicheskiy institut imeni Kalinina.
(Rutile crystals--Defects)

KOYKOV, S.N.; FOMIN, V.A.; TSIKIN, A.N.

Electric aging of polytetrafluoroetylene. Izv.vys.ucheb.zav.;fiz.no.2: 31-37 '63. (MIRA 16:5)

1. Leningradskiy politekhnicheskiy institut imeni M.I. Kalinina.
(Ethylene—Electric properties)

KUNIN, V. Ya.; FOMENKO, L. N.; TSIKIN, A. N.

Change of electroconductivity and of the distribution of the electric field potential in rutile ceramics during the process of aging. Fiz. tver. tela 4 no.4:972-976 Ap '62. (MIRA 15:10)

1. Leningradskiy politekhnicheskiy institut imeni Kalinina.

(Ceramics—Electric properties)
(Dielectrics)

44167

S/181/62/004/012/013/052
B104/B102

15.2650

AUTHORS: Kunin, V. Ya., and Tsikin, A. N.

TITLE: Electric aging of rutile single crystals

PERIODICAL: Fizika tverdogo tela, v. 4, no. 12, 1962, 3435-3440

TEXT: The existing hypotheses on electric aging of rutile single crystals are checked experimentally by studying the change in the electric properties of the crystals during aging and regeneration of the original properties. Discs of 0.5 mm thickness (5 mm diameter) were cut from spectroscopically pure rutile single crystals parallel and perpendicular to the optical axis. The specimens were transparent and of faintly yellow color. Silver electrodes were applied to their polished faces over areas of about 3.5 mm^2. Polycrystalline, spectroscopically pure, sintered specimens of TiO_2 and T-80 (T-80) capacitor ceramics (87% TiO_2) were investigated for comparison. Aging was studied in a thermostat at temperatures between 100 and 200°C and electric field strengths between 35 and 700 v/mm. Results: In an electric field parallel to the optical axis C, the electric conductivity of single crystals not aged electrically

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Electric aging of rutile single ...

is higher by about four orders of magnitude than that measured in a field perpendicular to the optical axis. In both cases, whatever the direction of the electric field relative to the optical axis, the electric conductivity of the specimens investigated increased in four stages according to the period of time that the specimens stayed in the electric field. Only a slight increase can be found during the first stage, a steep one during the second stage, a slight one during the third stage and a steep one again during the fourth stage. Specimens in an electric field perpendicular to the optical axis age more slowly than those in an electric field parallel thereto. The original properties of the capacitor ceramics and of rutile single crystals aged up to the second, third or fourth stage can be completely regenerated without any electric field by heating in air to 700-800°C. Aging is slower at lower temperatures. Regeneration in electric fields opposed to the field during aging takes a similar course for rutile single crystals and capacitor ceramics. There are 5 figures.

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Electric aging of rutile single ... S/181/62/004/012/013/052
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ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M.I. Kalinina
(Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: July 5, 1962

Card 3/3

TSIKIN, B.G.

Approximate theory of an izochronous traveling-wave tube. Radiotekh. i elektron. 10 no.2:312-320 F '65. (MIRA 18:3)

KOVALENKO, Ye.S.; KOVALENKO, V.S.; TSIKIN, B.G.

Calculation of space harmonics in septate wave guides. (MIRA 17:9)
Izv. TPI 122:70-79 '62.

MOROZOV, B.N.; MARENKOV, V.M.; TSIKIN, B.G.; SHISHENINA, L.G.

Uniformly bent periodically septate waveguides for cyclic electron accelerators. Izv. TPI 122:80-88 '62. (MIRA 17:9)

L 45828-66 EWT(1) JM

ACC NR: AR6015967 SOURCE CODE: UR/0275/65/000/011/A023/A023

49
B

AUTHOR: Tsikin, B. G. 25

TITLE: Approximate nonlinear theory for a traveling wave tube in the case of finite values for the amplification parameter

SOURCE: Ref. zh. Elektronika i yeye primeneniye, Abs. 11A145

REF SOURCE: Sb. Vopr. elektron. sverkhvysok. chastot. Vyp. I. Saratov, Saratovsk. un-t, 1964, 10-16

TOPIC TAGS: traveling wave tube, integrodifferential equation, nonlinear theory

ABSTRACT: L. A. Vaynshteyn's system of integrodifferential equations for a TWT is solved by representing the unknown functions for wave amplitude along the tube, the rf current component and the phase difference between them in the form of power series. The results of calculations will be published in a future article. These results showed that the equations derived may be used for a qualitative evaluation of the maximum efficiency, the optimum length of the TWT and the relationship between optimum length and the magnitude of the input signal for the case of finite values of the amplification parameter. Bibliography of 10 titles. G. M. [Translation of abstract]

SUB CODE: 09

UDC: 621.385.632

Card 1/1 10

33581
S/194/61/000/012/093/097
D271/D301

6,4400

AUTHORS: Arzumanov, V. N. and Tsikin, I. A.

TITLE: The influence of interference on the operation of the synchronizing system of a double-sideband receiver

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1961, 9, abstract 12K55 (Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t, 1960, no. 9, 3-11)

TEXT: The operation is studied of a receiver in a telecommunication system based on double- sideband AM signal with a suppressed carrier, with interference at the receiver input. It is shown that: 1) Use of usual integrating RC filters with a small time constant τ helps to improve the suppression of the interfering voltage only when audio frequencies Ω are relatively high; 2) when τ is increased, filter discrimination is improved in the region of lower audio frequencies Ω and at the same time some components of the interference spectrum are enhanced and the pulling-in band is made narrower; 3) use of a proportional integrating filter with a great time

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The influence of ...

constant considerably improves the filter action in the modulation vand. It is pointed out that it is possible to achieve pulling-in band nearly identical with the locking band, when time constants are sufficiently large. The experimental study of the system behavior in the pulling-in and locking conditions confirmed that the obtained results are qualitatively correct. 3 references. [Abstractor's note: Complete translation.]

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85485
S/108/60/015/011/008/012
B019/B063

6,44400

AUTHORS: Arzumanov, V. N. and Tsikin, I. A., Members of the Society

TITLE: A Method of Receiving Double-band Amplitude-modulated Signals With a Suppressed Carrier Frequency

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 11, pp. 50-55

TEXT: The authors studied the mode of operation of the circuit shown in Fig. 1 (block diagram) which is designed for suppressing the carrier frequency of double-band amplitude-modulated signals. They derive the differential equation

$$\tau \frac{d^2\theta}{dt^2} + \frac{d\theta}{dt} - \Delta\omega_y \sin 2\theta = \Delta\omega_{carr.} \quad (5)$$

which describes the mode of operation of the circuit. Solutions of this differential equation are graphically represented in Fig. 2. A specific feature of (5) is the dependence of $\Delta\omega_y$ on the amplitude of the signal received. A decrease of the signal amplitude leads to a semistable cycle. A differential equation is given for the reception of speech signals:

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A Method of Receiving Double-band Amplitude-modulated Signals With a Suppressed Carrier Frequency

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$$\tau \frac{d^2\theta}{dt^2} + \frac{d\theta}{dt} - \Delta\omega_y 2\theta = \Delta\omega_{carr.} + \Delta\omega_\Omega \sin\Omega t \quad (7)$$

This differential equation describes the mode of operation of the corresponding receiver. The integration of this equation is briefly discussed, and the conditions are given under which there is no synchronization in the system. Finally, the authors discuss the effect of noise and selective fading of signals. Figs. 5 and 6 show the results of tests of the receiving system described by the authors. Besides, the dependence of the receiving band and of synchronization upon the frequency and amplitude of the modulated signal voltage is graphically shown in these figures. There are 6 figures and 4 references: 2 Soviet and 2 US.

SUBMITTED: April 26, 1960

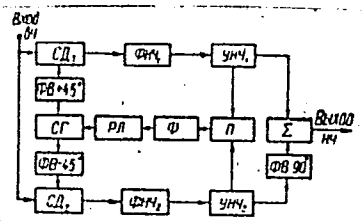

Рис. 1

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